Work Order ID 112537

February-13-14 3:12:38 PM

112537

Item ID: D3065-1 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID: **Stop** *NS2*

Item Name: Step Spacer

Start Date: 30/01/2014 **Start Qty:** 40.00 *40*

Required Date: 30/01/2014 **Req'd Qty:** 40.00 *40*

Reference:

Cust Item ID:

Customer:

Approvals: **Process Plan:** _____ **Date:** 14-02-13 **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

Draw Nbr	Revision Nbr
D3065	Rev B

100 0.00

100

Waterjet

FLOW CNC Waterjet

FLOW WATER JET

Memo 0.00

1-Cut as per Dwg D3065

Dwg Rev:_____

Prog Rev:_____

ISSUE PO P023011

POSSIBLE SUPPLIER:LOEBSACK WATERJET

CRT

UMB 2/16/14 _____ _____

102 0.00

102

Small Fab

Small Fab

Memo 0.00

DEBURR A/R

_____ _____ _____ _____

4/4/14 39 mm (40)

QC 6

DAS 27 9-89 4/4/16

39 CRT

DQA: _____ Date: _____

DART AEROSPACE

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence
☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

_____
_____
_____

Work Order ID 112537

February-13-14 3:12:38 PM

1125537

Item ID: D3065-1 **Accept** *N9000040100* **Setup Start** *NS1*

Revision ID:

Item Name: Step Spacer **Stop** *NS2*

Start Date: 30/01/2014 **Start Qty:** 40.00 *40*

Required Date: 30/01/2014 **Req'd Qty:** 40.00 *40*

Reference:

Cust Item ID:

Customer:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
103	Bend as per dwg	0.00			DAS 30 9-89	39			14/04/24
103									
Brake NC	**Memo**	0.00							
Brake NC									
104	QC5- Inspect part completeness to step on W/O	0.00			DAS 27 9-89	39			
104									
QC	**Memo**	0.00			14/4/24				
Quality Control									
106	Chemical Conversion Coat per QSI005 4.1	0.00				39	14/4/24		
106									
HandFinish	**Memo**	0.00							
Hand Finishing									

DQA: _____ Date: _____

DART AEROSPACE

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function

☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence

☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge

☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled

☐ Other

_____
_____
_____

Item ID: D3065-1 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Step Spacer
Start Date: 30/01/2014 **Start Qty:** 40.00 *40*
Required Date: 30/01/2014 **Req'd Qty:** 40.00 *40*
Reference:
Cust Item ID:
Customer:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
108	QC7-Inspect Chemical Conversion Coat	0.00				39x			14/04/25
108									
QC	**Memo**	0.00							
Quality Control									
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
110									
Packaging	**Memo**	0.00							
Packaging									
125	QC6- Inspect dimensions to drawing	0.00							
125									
QC	**Memo**	0.00							
Quality Control									

DAS 36 9-89

DAS 27 9-89

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function

☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence

☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge

☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled

☐ Other

_____
_____
_____

Item ID: D3065-1 **Accept** *N9000401000* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Step Spacer

Start Date: 30/01/2014 **Start Qty:** 40.00 *40*
Required Date: 30/01/2014 **Req'd Qty:** 40.00 *40*
Reference:

Cust Item ID:
Customer:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180	Identify as per dwg & Stock Location: 6-A	0.00							
180						39x			14/04/25 DAS 36 9-89
Packaging	**Memo**	0.00							
Packaging									
190	QC21- Final Inspection - Work Order Release	0.00							
190							14-4-25		
QC	**Memo**	0.00							
Quality Control									

14-4-25

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence
☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

_____
_____
_____

Picklist Print

February-13-14 3:12:43 PM

Work Order ID: 112537 *112537*

Parent Item: D3065-1 *D3065-1*

Parent Item Name: Step Spacer

Start Date: 30/01/2014 **Required Date:** 30/01/2014

Start Qty: 40.00 **Required Qty:** 40.00

Comments: IPP: C02.11.01Incorporated D3066-1 IPPKJ/RF
IPP: D06.04.25Water jet EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3065-1P *D3065-1P* Step Spacer		Purchased	No				Each	0.0000	**	40	40	4/4/14	

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐ ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence
☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

_____
_____
_____

DART AEROSPACE LTD	Work Order:	112537
Description: Step Spacer	Part Number:	D3065-1
Inspection Dwg: D3065 **Rev:** B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

[X] First Article [ ] Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.250	+/-0.010	0.250	✓			
2.093	+/-0.010	2.093	✓			
3.936	+/-0.010	3.936	✓			
4.186	+/-0.010	4.18	✓			
0.587	+/-0.010	0.587	✓			
Ø0.128	+0.005/-0.001	0.132	✓			
R0.125	+/-0.010	0.125	✓			
3.465	+/-0.010	3.465	✓			
Ø1.250	+0.012/-0.001	1.249	✓			
0.368	+/-0.010	0.368	✓			
0.871 (Pitch)	+/-0.005	0.871	✓			
0.040	+/-0.010	0.040	✓			

DAS

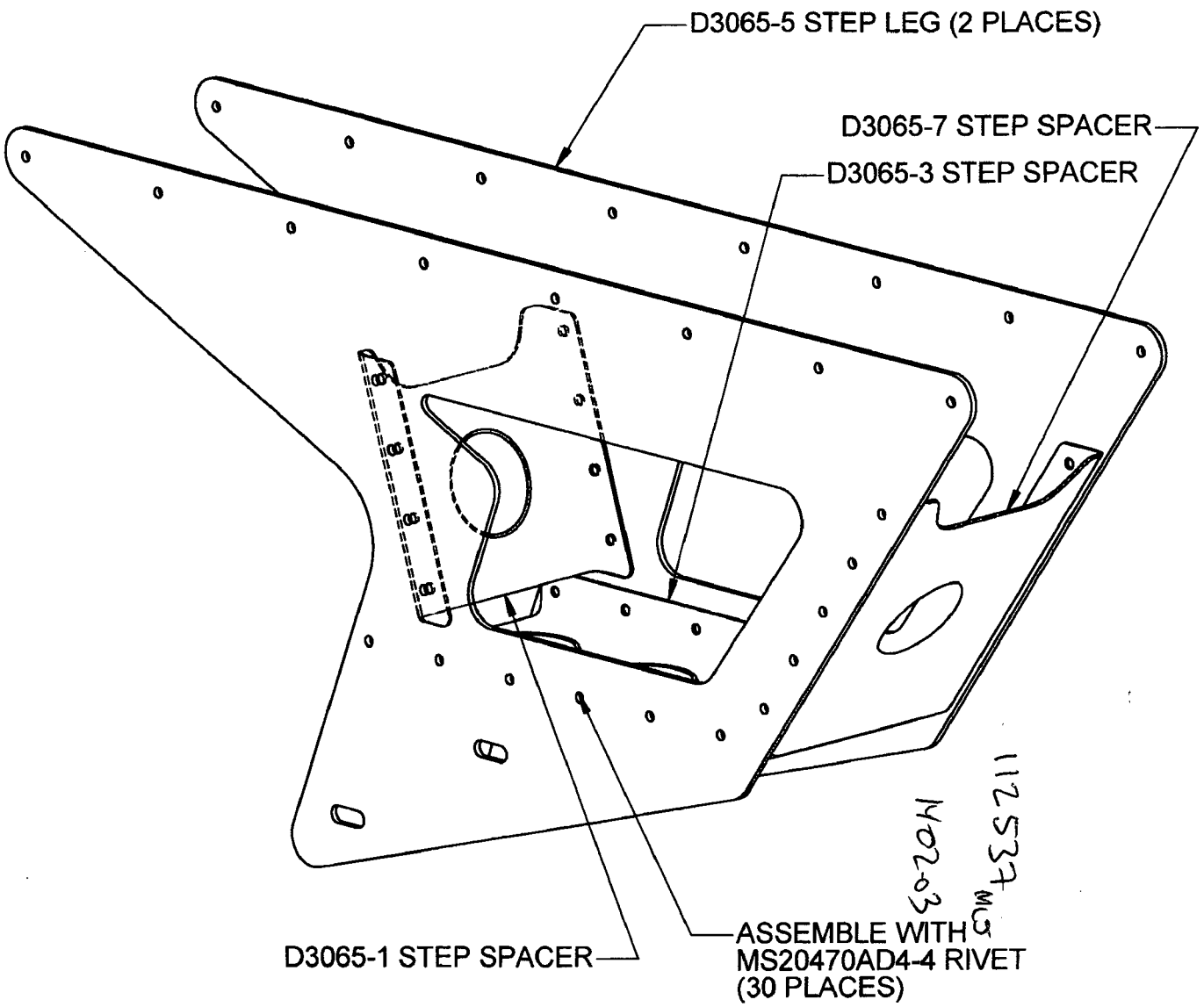
Measured by:	mm	Audited by:	27	Prototype Approval:	
Date:	14/04/15	Date:	14/4/16	Date:	

Rev	Date	Change	Revised by	Approved
A	03.09.22	New Issue	KJ/RF	
B	06.06.23	Dwg Rev. changed	KJ/JLM	
C	07.02.07	Dimension 0.040 added	KJ/JLM	

DESIGN	DRAWN BY	**DART AEROSPACE LTD**	
	CB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. B
PH		D3065	SHEET 1 OF 5
DATE		TITLE	SCALE
06.05.23		STEP LEG ASSEMBLY	1:2

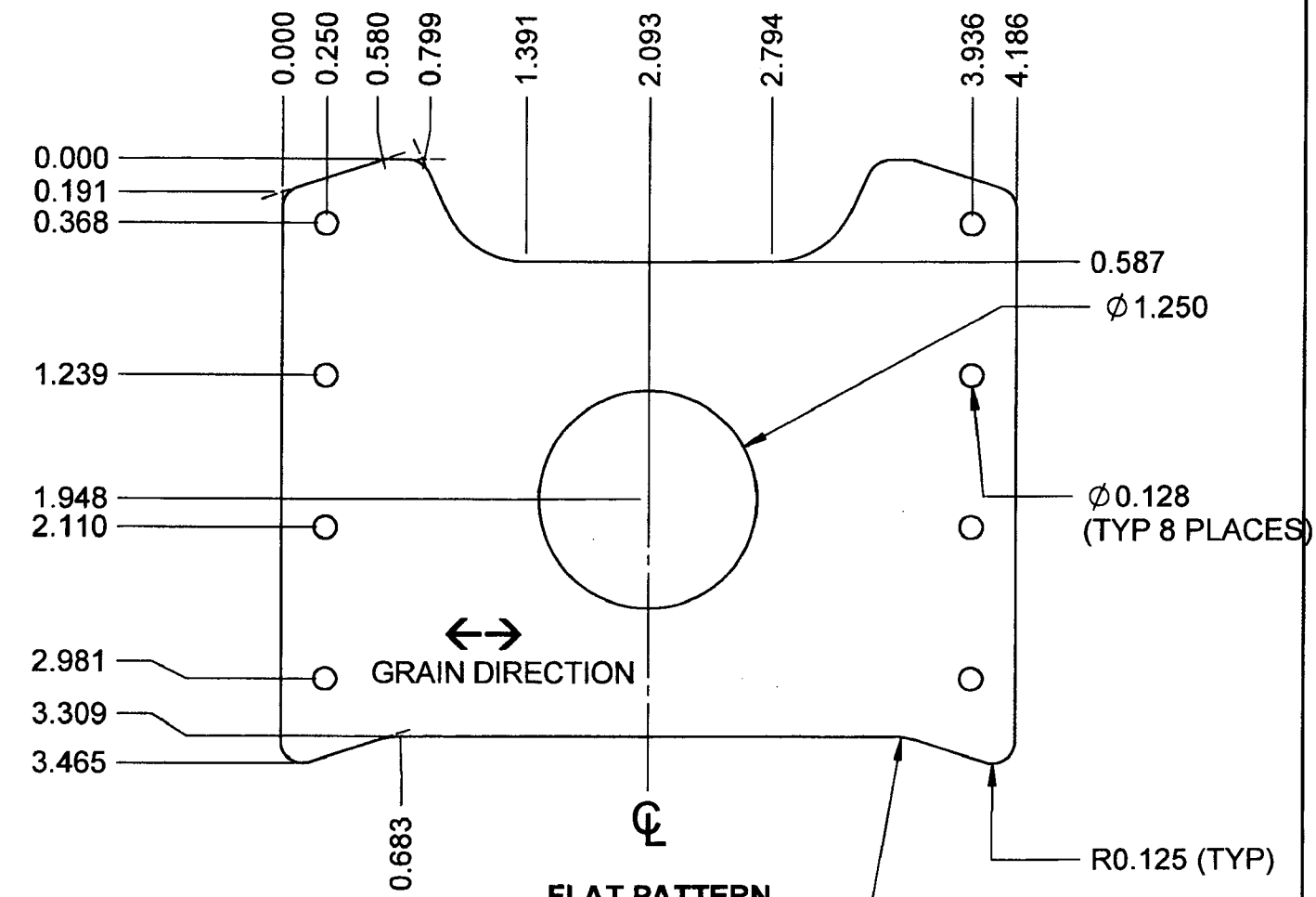
A	02.09.11	NEW ISSUE
B	06.05.23	ADD 6061-T6 MATERIAL, ADD SLOTS TO D3065-5

RELEASED
06 06 20



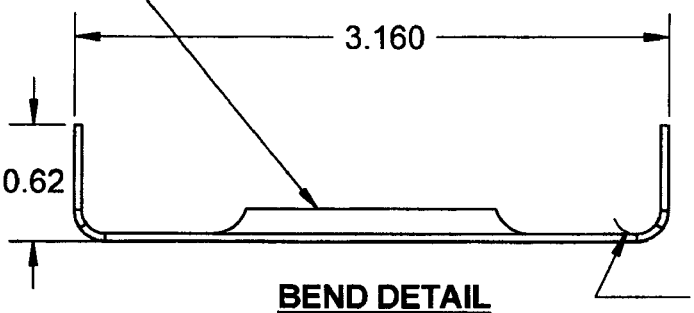
D3065-041 STEP LEG ASSEMBLY

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED PH	APPROVED	DRAWING NO. D3065	REV. B SHEET 2 OF 5
DATE 06.05.23		TITLE STEP LEG ASSEMBLY	SCALE 1:1



FLAT PATTERN

FLANGE AFTER BENDING TOWARDS SIDE SHOWN USING DT8174 (2 PLACES)



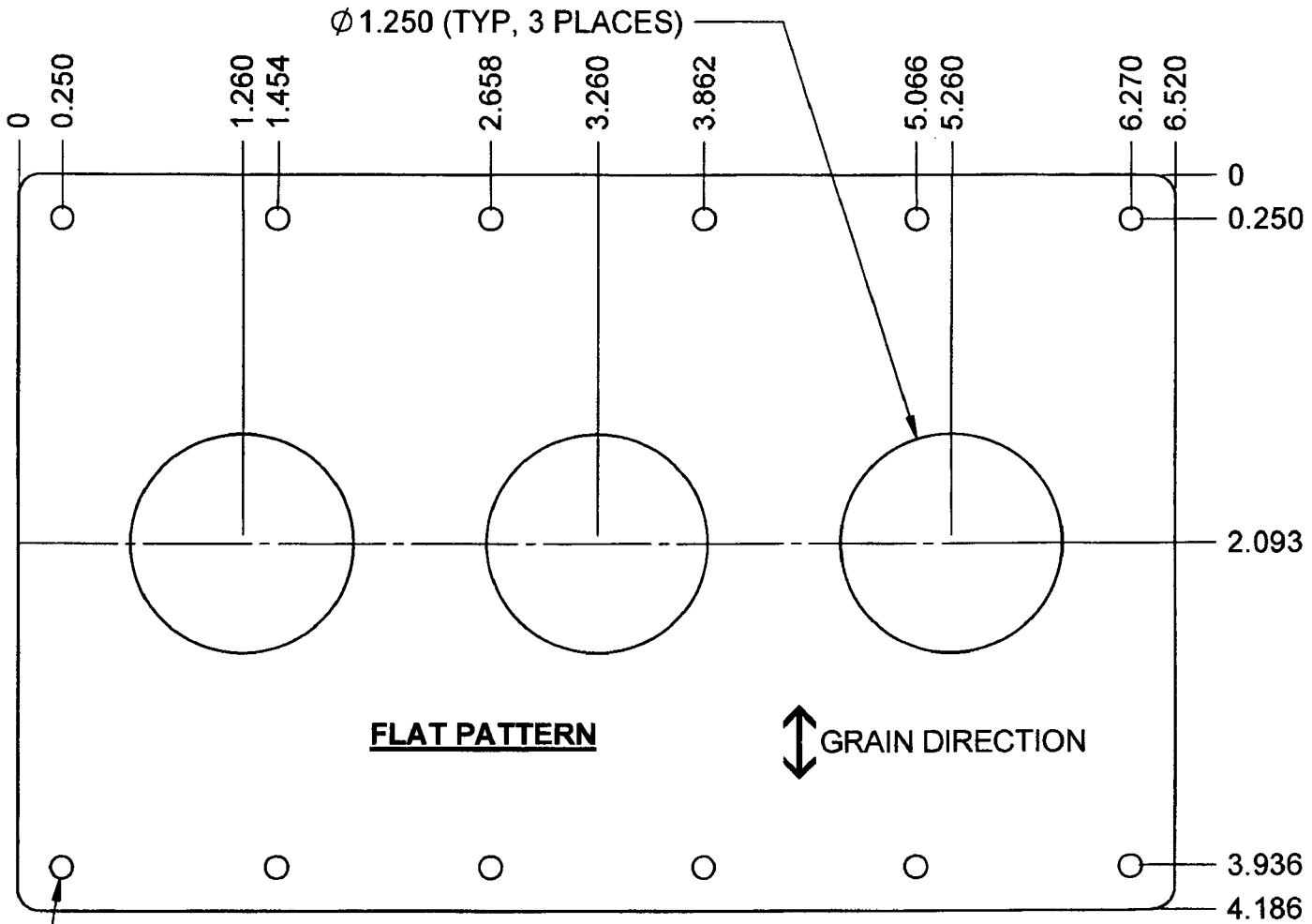
BEND DETAIL

RELEASED
06-06-23

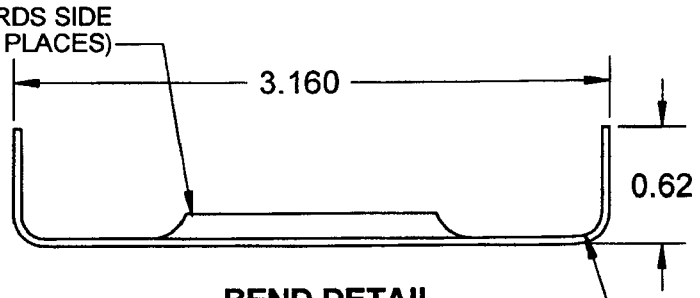
D3065-1 STEP SPACER

1) MATERIAL: 2024-T3 (QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040)
2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
3) BREAK ALL SHARP EDGES 0.005 TO 0.010
4) PART IS SYMMETRIC ABOUT CENTERLINE
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) ALL DIMENSIONS ARE IN INCHES

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED PH	APPROVED	DRAWING NO. D3065	REV. B SHEET 3 OF 5
DATE 06.05.23		TITLE STEP LEG ASSEMBLY	SCALE 1:1



RELEASED
06 oct 20



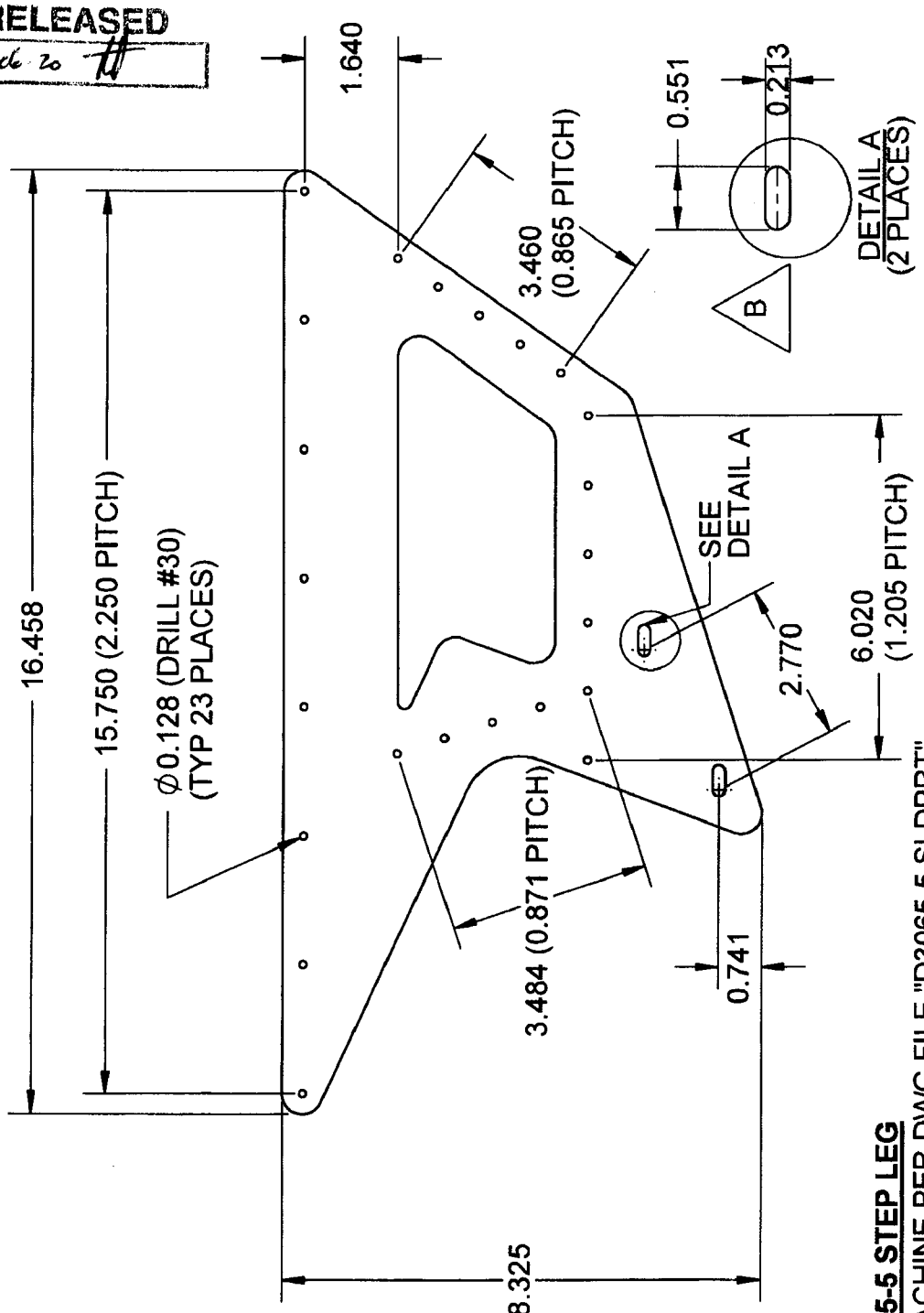
BEND DETAIL

D3065-3 STEP SPACER

1) MATERIAL: 2024-T3 (QQ-A-250/4)
   0.040 THICK (REF DART SPEC. M2024T3S.040)
2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
3) PART IS SYMMETRIC ABOUT CENTERLINE
4) BREAK ALL SHARP EDGES 0.005 TO 0.010
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) ALL DIMENSIONS ARE IN INCHES

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED PH	APPROVED	DRAWING NO. D3065	REV. B SHEET 4 OF 5
DATE 06.05.23		TITLE STEP LEG ASSEMBLY	SCALE 1:3

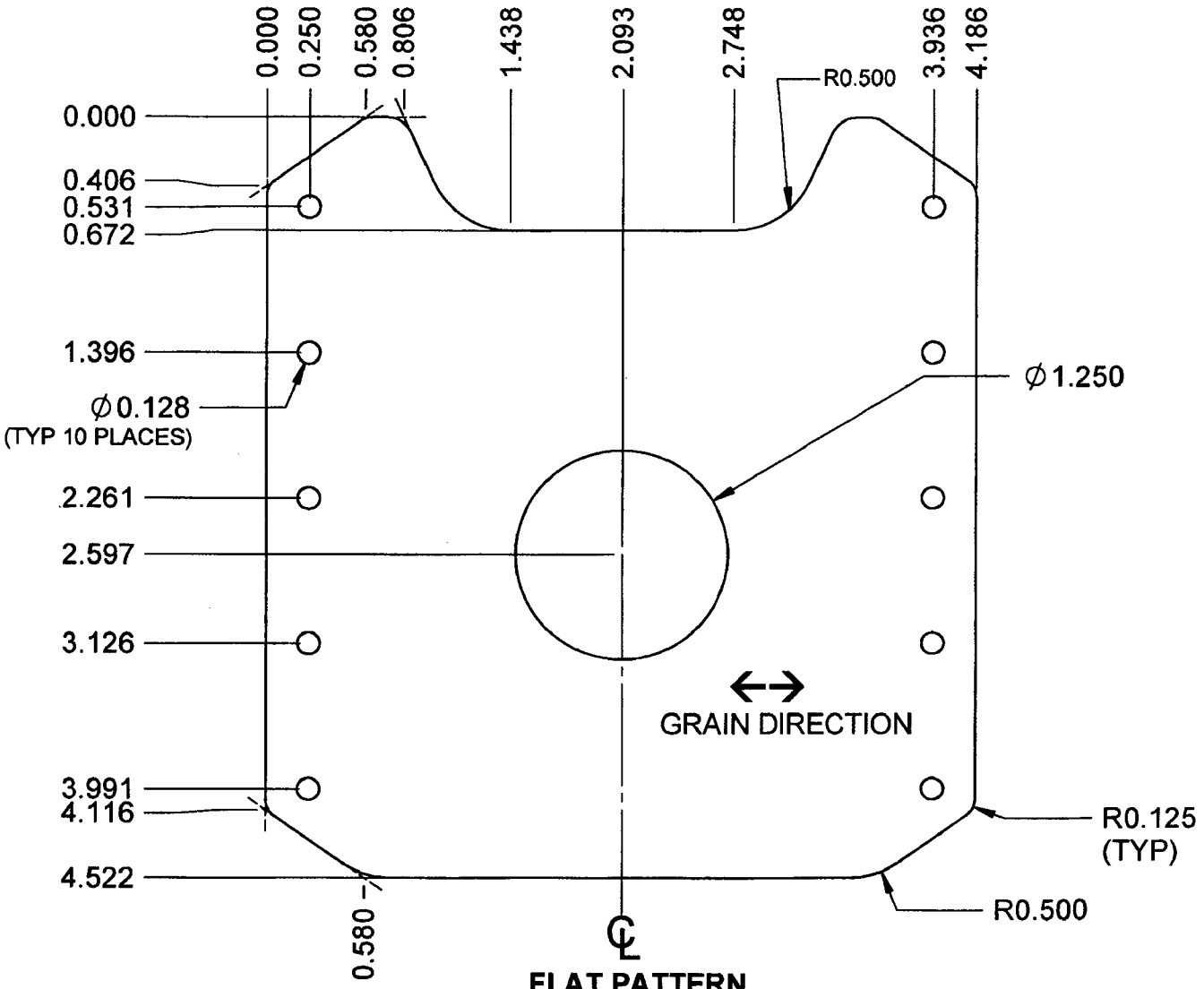
RELEASED
06.06.20



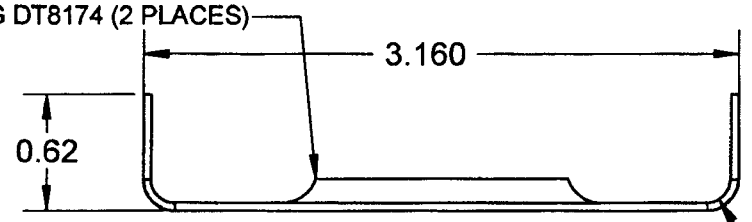
D3065-5 STEP LEG

1) MACHINE PER DWG FILE "D3065-5.SLDPRT"
2) MATERIAL: 6061-T6 (PER QQ-A-250/11 OR AMS 4025 OR AMS 4027) 0.080" THICK
(REF DART SPEC M6061T6S.080)
OR
5052-H32 (PER QQ-A-250/8 OR AMS 4016) 0.080 THICK (REF DART SPEC. M5052H32S.080)
3) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
4) BREAK ALL SHARP EDGES 0.005 TO 0.010
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) ALL DIMENSIONS ARE IN INCHES

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED PH	APPROVED	DRAWING NO. D3065	REV. B SHEET 5 OF 5
DATE 06.05.23		TITLE STEP LEG ASSEMBLY	SCALE 1:1



FLANGE AFTER BENDING TOWARDS SIDE SHOWN USING DT8174 (2 PLACES)



BEND DETAIL

RELEASED
06 06 20

D3065-7 STEP SPACER

1) MATERIAL: 2024-T3 (PER QQ-A-250/4) 0.040 THICK (REF DART SPEC. M2024T3S.040)
2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1
3) PART IS SYMMETRIC ABOUT CENTERLINE
4) BREAK ALL SHARP EDGES 0.005 TO 0.010
5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
6) ALL DIMENSIONS ARE IN INCHES

DART AEROSPACE

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO23011

Purchase Order Date 2/14/2014
PO Print Date 2/14/2014

Order From : VC-LWC001

LOEBSACK WATERJET CANADA LTD.
55 NORTHFIELD DR. E.
P.O.BOX 339

WATERLOO, ONTARIO N2K 3T6

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone

Ship To Contact
Ship To Phone
Ship Via: FedEx PI collect
Ship Acct:

Buyer Michael Gregoire
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB FCA – (Free Carrier)

Line Total: **$1,164.00**

17	D2519P	Clamp	3/28/2014 Yes 3/28/2014	60.00 Each		$3.00	$180.00

Manufacture as per drawing D2519 rev.d
B110683

Line Total: **$180.00**

18	D3065-1P	Step Spacer	3/28/2014 Yes 3/28/2014	40.00 Each		$7.00	$280.00

Manufacture as per drawing D3065 rev.b
B112537

	D3065-1P		3/28/2014 3/28/2014	20.00 Each		$7.00	$140.00

Manufacture as per drawing d3065 rev.b
B110810

Line Total: **$420.00**

PO Instructions: PROCUREMENT QUALITY CLAUSES
A005 RIGHT OF ENTRY
A008 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION SENT TO DART AEROSPACE)
A012 CHEMICAL AND PHYSICAL TEST REPORTS
A016 PERSONNEL QUALIFICATION
A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE)
A026 CERTIFICATION OF MATERIAL CONFORMANCE
A042 DART NOTIFICATION BY SUPPLIER

Note:

Loebsack WaterJET Canada Ltd.

55 Northfield Dr., E., Box 339
Waterloo, On. N2K 3T6
(519)570-6590
F. (519)893-4252

Certificate of Compliance

Sold To: DART Aerospace

Purchase Order Nu ID PO23011

Item	Quantity	Part Number	Revision	Description	Mtl. / Thk.	HT Number
18(4)	60	D3065-1	b	STEP SPACER	2024-T3 / 0.040"	663172A5
19(5)	100	D3065-3	b	STEP SPACER	2024-T3 / 0.040"	663172A5
21(7)	60	D3065-7	b	STEP SPACER	2024-T3 / 0.040"	663172A5
20(6)	110	D3065-5	b	STEP LEG	5052-H32 / 0.080"	3C5291
9(8)	20	D4093-1	d	BRACKET	6061-T6 / 0.750"	37797032
10(9)	10	D4093-3	d	BRACKET	6061-T6 / 0.750"	37797032
8(2)	20	D3319-1	c	WEARPLATE	CRS 18GA / 0.048	3683T3-51
7(1)	20	D3319-3	c	WEARPLATE	CRS 18GA / 0.048	3683T3-51
22(3)	120	D3537-1F	c	WEARPAD	304 SS / 0.063"	A1303988
11(10)	40	D3405-1F	b	GHW BRACKET	304 SS / 0.120"	350420

This is to certify that the whole of the supplies detailed hereon has been inspected, tested, packed, and unless otherwise stated, conform in all respects with the requirements of the contract or order.

Name: Derek Loebsack Title: President

Sign: Dated: 07-14-04

THYSSENKRUPP MATERIALS NA

J.M. WOODTURNING LTD
ALUMINUM PLATE 6061-T651
.750" THICK X 48.5000" X 96.5000"
PART NO.

PO/Rel FRED

We certify that this is a true copy of the report furnished by the producer of the metal, or data resulting from tests made in approved labs.

Signed by:_____

Certificate of Mill Test Results

BL PEC-851084-001 19Nov13
Pg 1/1

TEST CERTIFICATE

HULAMIN

Certificate No : 1209LB2682

Hulamin Limited Reg. No. 1940/012844/06 VAT Reg No. 4080149614
HEAD OFFICE: Mowe Mobbs Rd, Pietermaritzburg 3201, P.O. Box 74, Pietermaritzburg 3200, South Africa
Telephone: +27 33 3556911 Telefax: +27 33 394 6335

BUYER:		
TA CHEN INTERNATIONAL INC 5955 OBISPO AVE LONG BEACH CA 90805	Hulamin Load No: HL012523 Lot No: 17/09/032C8 PA List No: 2/1161413 Release No: RE035656	Product : PLATE HEAT TREATED FINISHED, 6061-T651 0.75" x 48.5" x 96.5" Dimension : 0.75" X 48.5" X 96.5" Alloy - Temper : 6061 - T651
	Cust Order No : N03100-S HULAMIN Order No : 1817428 Item Part : 1/1	Certificate No : 1209LB2682 Cust Ref/Part No: Combined PA List No : R/2184

Case No : PFW871

MECHANICAL TEST RESULTS

Lot No.	Cast No.	Metal Id	Alloy	Spec No	Mechanical Properties							
					Yield Strength (Ksi)	UTS (Ksi)	Elongation A50 (%)	Earing (%)	Test Date	Gauge Length (inches)	Bend Test	Actual Gauge (inches)
Spec				Min	35.1	42.0	9					0.75
				Max								0.781
17/09/032C8	VAST	37797032	6061	1	41.6	46.7	15		07/09/12	2		0.765
				2	41.6	46.7	15		07/09/12	2		0.765

CHEMICAL COMPOSITION

	Cast No.	Alloy	Si (%)	Fe (%)	Cu (%)	Mn (%)	Mg(%)	Cr(%)	Zn (%)	Ti (%)	Each(%)	Total(%)	Al(%)
Min			0.40		0.15		0.8	0.04					
Max			0.8	0.7	0.40	0.15	1.2	0.35	0.25	0.15	0.05	0.15	
	VAST	6061	0.69	0.44	0.28	0.11	1.01	0.21	0.01	0.012			97.20

CONFORMS TO: ASME SB-209 ASTM B209/10 AMS 4027M AMS-QQA-250/11, 09.1997

For purposes of determining conformance with these specifications, an observed value or a calculated value shall be rounded "to the nearest unit" in the last right-hand digit used in expressing the specification limit, in accordance with the rounding method of ASTM Practice E29, for Using Significant Digits in Test Data to Determine Conformance with Specifications.

WE HEREBY CERTIFY, THAT THE MATERIAL DESCRIBED ABOVE HAS BEEN TESTED AND COMPLIES WITH THE TERMS OF THE ORDER CONTRACT. THE INSPECTION RESULTS INDICATED IN THE CHEMICAL COMPOSITION HAVE BEEN OBTAINED FROM CAST ANALYSES.

Dr A. Pocivavsek(HEAD OF CHEMICAL TESTING)

Ver1.0.1

V. Markram(HEAD OF PHYSICAL TESTING)

Printed Date: 19 Nov 2012

1 of 1

MILL TEST REPORT TA CHEN INTERNATIONAL, INC.
Customer: COPCON PO#:PEC-253613 SO#:PR6420
Item:.750489660617651 Bundle:PFW871 Heat#:37797032
This MTR contains 1 page (Page# 1)
MTR#:HLCLR161784_PFW

KAISER ALUMINUM
FABRICATED PRODUCTS

Built in Class

CERTIFIED TEST REPORT

http://Online.KaiserAluminum.com

Kaiser Aluminum
Trentwood Works
Spokane, WA 99215-5108
(800) 367-2586

CUSTOMER PO NUMBER:	WORK PACKAGE:	CUSTOMER PART NUMBER:	PRODUCT DESCRIPTION:
5400197766-20		ALFLR01581	HT Flat Sheet

KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	ALLOY:	CLAD:	TEMPER:
1160889	2	11/14/2013	2024	BARE	T3
WEIGHT SHIPPED:	**QUANTITY:**	**B/L NUMBER:**	**GAUGE:**	**WIDTH:**	**LENGTH:**
3293 LB	117 PCS EST.	2044959	0.0400 IN	48.000 IN	144.000 IN

SHIP TO:	SOLD TO:
COPPER & BRASS SALES 404 CENTURA COURT SPARTANBURG, SC 29303 US	COPPER & BRASS SALES ATTN: ACCOUNTS PAYABLE P.O. Box 5116 SOUTHFIELD, MI 48086 US

MHU 1730227: LOT 663172A5: 117 pieces

Certified Specifications

AMS 4037/RevP AMS-QQ-A-250/4/RevA ASTM B 209/Rev10 CMMP 019/RevD CMMP 025/RevU

Test Results:

Test Code: 1504

LOT: 663172A5 CAST: 641 DROP: 27 INGOT: 3

OAS
27
9-09
11/7/16

Melted in USA
(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir/#Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T3	LT / 02 (Min:Max)	68.1 : 68.2 (470 : 470)	46.0 : 46.1 (317 : 318)	17.1 : 17.8

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR		OTHER
Actual	0.09	0.23	4.7	0.57	1.3	0.01	0.16	0.02	0.01	0.00	TOT	0.03

Chemistry:		SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR		OTHER
2024	MIN	0.00	0.00	3.8	0.30	1.2	0.00	0.00	0.00	0.00	0.00	MAX	0.05
	MAX	0.50	0.50	4.9	0.9	1.8	0.10	0.25	0.15	0.05	0.05	TOT	0.15

Aluminum Remainder

Plant Serial: 4315340
Kaiser Order Number: 1160889
Line Item: 2

From: ThyssenKrupp Materials NA
Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402984673
CstAr CstOr 256039
Wgt.: 55.296 LB Date 02/20/2014

KAISER ALUMINUM
FABRICATED PRODUCTS

Built in Quality

CERTIFIED TEST REPORT

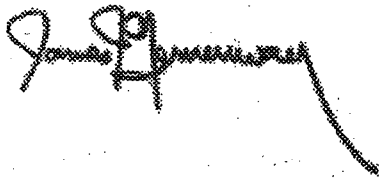
http://Online.KaiserAluminum.com

Kaiser Aluminum
Trentwood Works
Spokane, WA 99215-5108
(800) 367-2586

CERTIFICATION

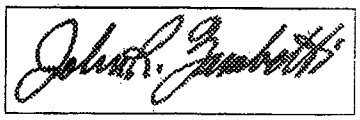
Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. For materialthicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminum Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony underfederal law. ISO-9001:2000 certified.

JAMES HEMENWAY, LABORATORIES SUPERVISOR



Plant Serial: 4315340
Kaiser Order Number: 1160889
Line Item: 2

From: ThyssenKrupp Materials NA
Cust. THYSSENKRUPP MATERIALS NA - ECAD Del.: 2402984673
CstAr CstOr 256039
Wgt.: 55.296 LB Date 02/20/2014



FORM: 1006 WORKORDER: 2402984673

COPPER AND BRASS SALES

MATERIAL TYPE

ALUMINIUM ALLOYS

PRODUCT DESIGNATION

2014 2024 2224 2324 7050 7075 7150 7175 7475 ALUMEC 89 ALUMEC 99 QC-7

"WARNING"

SMALL CHIPS,FINE TURNINGS AND DUST MAY IGNITE READILY.EXPLOSION POTENTIAL MAY BE PRESENT WHEN:DUST OR FINES ARE DISPERSED IN THE AIR; FINE, DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH CERTAIN METAL OXIDES; OR,CHIPS,FINES,DUST OR MOLTEN ALUMINUM ARE IN CONTACT WITH WATER OR MOISTURE.KEEP AWAY FROM IGNITION SOURCE.USE EXPLOSION-PROOF VENTILATION.KEEP MATERIAL DRY.

THIS PRODUCT CONTAINS BERYLLIUM AND COPPER.INHALING BERYLLIUM DUST OR FUMES MAY CAUSE CHRONIC BERYLLIUM DISEASE (CBD),A SERIOUS CHRONIC LUNGDISEASE IN SOME INDIVIDUALS.BERYLLIUM IS A CANCER HAZARD;OVER TIME CBDAND CANCER CAN BE FATAL,TARGET ORGAN IS PRIMARILY THE LUNG.INHALING LARGE AMOUNTS OF COPPER,MAGNESIUM OXIDE,MANGANESE OXIDE,ANDZINC OXIDE FUMES OR DUST MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS.CHRONIC OVEREXPOUSURE TO COPPER MAY CAUSE THICKENING OF THE SKIN;AND SKIN,TEETH,AND HAIR DISCOLORATION.CHRONIC OVEREXPOUSURE TOMANGANESE DUST CAN CAUSE CENTRAL NERVOUS SYSTEM DAMAGE,SCARRING OF THELUNGS AND REPRODUCTIVE HARM IN MALES.TARGET ORGAN IS PRIMARILY THE LUNG,BUT REPEATED HIGH EXPOSURE CAN ALSO AFFECT THE LIVER.CHRONICOVEREXPOSURE TO IRON OXIDE DUST/FUME MAY CAUSE LUNG SIDEROSIS. CHRONIC OVEREXPOSURE TO SILICON DUST CAN CAUSE CHRONIC BRONCHITIS.OVEREXPOSURE TO AMORPHOUS SILICA CAN CAUSE DRYING OF THE MUCOUSMEMBRANES OF THE EYES,NOSE,AND THROAT.

THIS PRODUCT ALSO CONTAINS NICKEL AND CHROMIUM COMPOUNDS.INHALATION OF NICKEL DUST OR FUME MAY RESULT IN INFLAMMATION OF THE RESPIRATORY TRACTAND CAUSE NASAL AND/OR LUNG CANCER.NICKEL HAS BEEN IDENTIFIED AS A POTENTIAL HUMAN CARCINOGEN.EXPOSURE TO CHROMIUM DUST OR FUMES MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS AND KIDNEY AND LIVER DAMAGE.UNDER HIGH TEMPERATURES,HEXAVALENT CHROMIUM MAY BE PRODUCED,IF IN THEINSOLUBLE FORM,IT IS A CONFIRMED HUMAN CARCINOGEN.(CALIFORNIA PROPOSITION 65).

IF COATED WITH OIL,MAY CAUSE SKIN IRRITATION/DERMATITIS BY CONTACT.WELDING FUME IS LISTED AS A POSSIBLE CARCINOGENIC TO HUMANS.
READ THE ALUMINIUM/ALUMINIUM ALLOYS MATERIAL SAFETY DATA SHEET (MSDS) ON FILE WITH YOUR EMPLOYER BEFORE WORKING WITH THIS MATERIAL.

* If processing or recycling produces particulate,use exhaust ventilation or other controls designed to prevent exposure to workers. Examples of such activities include melting, welding,grinding,abrasive sawing,sanding and polishing.Any activity which abrades the surface of this material can generate airborne particulate.Use appropriate NIOSH approved respiratory protection (P95; P100 for lead with, quantitative fit testing required) if exposures exceed the permissible limits.
* The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational exposures.
* Aluminum, in solid form and as contained in finished products presents no special health risk.
* Sold for manufacturing purposes only.This product can be recycled; contact your sales representative.

For additional information, call or write to Copper and Brass Sales,22355 West Eleven Mile Road, Southfield, MI 48033,telephone248-233-5600, or visit our web site @ www.copperandbrass.com.

ALUMINUM LABEL NO. 300-1056 ISSUED 10/01/2008

ADITYA BIRLA **HINDALCO INDUSTRIES LIMITED**

Jeevan Deep Building, 1 Prafulla Chandra Sen Sarani,
Kolkata-700071, India. Tel:+91-33-22402210
Fax: +91-33-22884858
Regd. Office: Century Bhavan, Dr. Annie Besant Road, Worli,
Mumbai - 400 025, INDIA.

Date 20-SEP-13

NAME OF THE PARTY : EMERSON CANADA INC.,161 THE WEST MALL,TORONTO, ONTARIO M9C4V8,,CANADA,,

PRODUCT : ALUMINIUM SHEET

QTY (MT) : 20,933

LC/NO.& DATE : 64687167 Dt. 29.08.2013

INVOICE NO : HAB/E/2014/72

COPY

THE TEST RESULTS OF THE SAMPLES DRAWN AND TESTED IN OUR LABORATORY ARE AS FOLLOWS :

QUALITY CERTIFICATE

SRNO	Package No	Alloy Temper	Net Wt (MT)	Size (mm)	Coil Nos.	Cast No./Heat No.
1	7173801#4	AA5052 , H32	1.487	3048 x 1219 x 2.29	H13HA5H0805002	7173801#4
2	2D0193B01#4	AA5052 , H32	1.508	3048 x 1524 x 2.54	H13HA5H0819010	2D0193B01#4
3	3C530#4	AA5052 , H32	1.487	2438 x 1219 x 2.03	H13HA5H0805017	3C530#4
4	2D0193B01#5	AA5052 , H32	1.503	3048 x 1524 x 2.54	H13HA5H0819010	2D0193B01#5
5	3C530#7	AA5052 , H32	1.487	2438 x 1219 x 2.03	H13HA5H0805017	3C530#7
6	7173801#5	AA5052 , H32	1.511	3048 x 1219 x 2.29	H13HA5H0805002	7173801#5
7	717290384	AA5052 , H32	1.488	3048 x 1219 x 2.29	H13HA5H0805001	717290384
8	717290382	AA5052 , H32	1.485	3048 x 1219 x 2.29	H13HA5H0805001	717290382
9	2D0193A0182	AA5052 , H32	1.47	3048 x 1524 x 2.54	H13HA5H0819011	2D0193A0182
10	7173801#2	AA5052 , H32	1.487	3048 x 1219 x 2.29	H13HA5H0805002	7173801#2

CHEMICAL COMPOSITION (%)

	Cast No	Si	Fe	Mn	Mg	Cu	Zn	Cr	Ti	B	Sr	Ni	Pb	V	Sn	Bi	Others	Rem. Alum.
1	7173801#4	.081	.216	.006	2.365	.001	0	0	.006	0	0	0	.001	0	0	0		97.123
2	2D0193B01#4	.133	.285	.041	2.413	.01	0	0	.02	0	0	0	.005	0	0	0		96.887
3	3C530#4	.2	.48	.137	2.6	.009	0	0	.013	0	0	0	0	0	0	0		96.397
4	2D0193B01#5	.133	.285	.041	2.413	.01	0	0	.02	0	0	0	.005	0	0	0		96.887
5	3C530#7	.2	.48	.137	2.6	.009	0	0	.013	0	0	0	0	0	0	0		96.397
6	7173801#5	.081	.216	.006	2.365	.001	0	0	.006	0	0	0	.001	0	0	0		97.123
7	717290384	.105	.263	.003	2.538	.001	0	0	.005	0	0	0	.001	0	0	0		96.873
8	717290382	.105	.263	.002	2.526	.001	0	0	.016	0	0	0	.001	0	0	0		96.873
9	2D0193A0182	.126	.101	.056	2.367	.016	0	0	.02	0	0	0	.005	0	0	0		96.68
10	7173801#2	.081	.216	.006	2.365	.001	0	0	.006	0	0	0	.001	0	0	0		97.123

MECHANICAL PROPERTIES

OTHER TESTS

	Cast No	UTS(Kg/mm2)	YS (Kg/mm2)	% Elongation	Bend Test
1	7173801#4	24.9	0	11.2	0 T Satisfactory
2	2D0193B01#4	23.2	0	10.6	0 T Satisfactory
3	3C530#4	22.9	0	9.5	0 T Satisfactory
4	2D0193B01#5	23.2	0	10.6	0 T Satisfactory
5	3C530#7	22.9	0	9.5	0 T Satisfactory
6	7173801#5	24.5	0	11.2	0 T Satisfactory
7	717290384	23.4	0	10.6	0 T Satisfactory
8	717290382	23.4	0	10.6	0 T Satisfactory
9	2D0193A0182	22.6	0	11.8	0 T Satisfactory
10	7173801#2	24.5	0	11.2	0 T Satisfactory

Remarks:- (1) EMERSON PO NO.736670 (2) ISSUED BY THE MANUFACTURER.

FOR HINDALCO INDUSTRIES LIMITED

AUTHORISED SIGNATORY

ADITYA BIRLA **HINDALCO INDUSTRIES LIMITED**

Jeevan Deep Building, 1 Prafulla Chandra Sen Sarani,
Kolkata-700071, India. Tel:+91-33-22402210
Fax: +91-33-22884808
Regd. Office: Century Bhavan, Dr. Annie Besant Road, Worli,
Mumbai - 400 030, INDIA.

Date: 20-SEP-13

NAME OF THE PARTY : RYERSON CANADA INC.,161 THE WEST MALL,TORONTO, ONTARIO M9C4V8,,CANADA.,

PRODUCT ALUMINIUM SHEET.

QTY (MT) 20.923

LC/PO.& DATE 64687167 Dt. 20.08.2013

INVOICE NO HRB/R/2014/72

COPY

QUALITY CERTIFICATE

SRNO	Package No	Alloy Temper	Net Wt (MT)	Size (mm)	Coil Nos.	Cast No./Heat No.
11	3C530#6	AA5052 , H32	1.486	2438 x 1219 x 2.03	H13HASH0805017	3C530#6
12	3C52981	AA5052 , H32	1.517	2438 x 1219 x 2.03	H13HA9H0905018	3C52981
13	2D0192B01#2	AA5052 , H32	1.503	3048 x 1524 x 2.54	H13HA9H0819010	2D0192B01#2
14	2D0193A01#5	AA5052 , H32	1.505	3048 x 1524 x 2.54	H13HA5H0819011	2D0193A01#5
		Total-	20.921			

CHEMICAL COMPOSITION (%)

	Cast No	Si	Fe	Mn	Mg	Cu	Zn	Cr	Ti	B	Sr	Ni	Pb	V	Sn	Bi	Others	Rem. Alum.
11	3C530#6	.2	.49	.139	2.6	.009	0	0	.013	0	0	0	0	0	0	0		96.397
12	3C52981	.2	.49	.137	2.6	.005	0	0	.013	0	0	0	0	0	0	0		96.397
13	2D0192B01#2	.133	.285	.041	2.611	.01	0	0	.02	0	0	0	.005	0	0	0		96.897
14	2D0193A01#5	.131	.301	.056	2.357	.015	0	0	.02	0	0	0	.005	0	0	0		96.80

MECHANICAL PROPERTIES — OTHER TESTS

	Cast No	UTS(Kg/mm2)	PS (Kg/mm2)	% Elongation	Bend Test		
11	3C530#6	22.9	0	9.8	0 T Satisfactory		
12	3C52981	22.4	0	10	0 T Satisfactory		
13	2D0192B01#2	23.2	0	10.6	0 T Satisfactory		
14	2D0193A01#5	22.6	0	11.8	0 T Satisfactory		

Remarks:- (1) RYERSON PO NO.736670 (2) ISSUED BY THE MANUFACTURER.

HINDALCO INDUSTRIES LIMITED

AUTHORISED SIGNATORY

ESSAR STEEL

ESSAR STEEL ALGOMA INC.,105 West Street, Sault Ste. Marie,Ontario, Canada P6A 7B4

SO No.,Item & Date.: 8017177 000020 2014/01/09	Shipment No.& Date.: 1000083594 2014/01/10	TC No., Date & Time : ESA-128192 2014/01/12 - 08:41:14
Sold to Customer Name and Address :	Ship to Customer Name and Address:	Customer PO NO./Item: 744335 / 2
RYERSON INC	RYERSON INC	BOL NO.: 1000083594
FINANCIAL DRIVE 7525	FINANCIAL DRIVE 7525	Cust.Part No.: 7804-2405
BRAMPTON,Ontario,Canada	BRAMPTON,Ontario,Canada	Carrier : NATIONAL TRANSPORTATION - 1158A
L6Y 5P4	L6Y 5P4	

Customer Specification : CR STEEL SHEET Carbon CQ / CS ASTM A1008 CS TY B (2012) Mark Number 7804-2405 Batch Annealed Top Semi Critical Surface Improved Shape Pickled Light Oiled Light Matte Finish Edge Sealant Required Std Thickness Tol

Supplementary Instructions : Test Cert 1:905-792-1617

Insp T/R : Chemical Analysis

Cust Use : AUTO IMPROVED SHAPE &SURF

ESSAR STEEL ALGOMA INC. HEREBY CERTIFIES THAT THE MATERIAL HEREIN DESCRIBED WAS MADE AND TESTED IN ACCORDANCE WITH THE RULES OF THE SPECIFICATION SHOWN. ALL RESULTS ARE RETAINED IN ACCORDANCE WITH THE COMPANY'S STANDARD RECORD KEEPING PRACTICES.
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MEETS EN 10204 3.1
ISO QUALITY AND ENVIRONMENTAL CERTIFICATES AVAILABLE AT WWW.ESSARSTEELALGOMA.COM

ALL HEATS FULLY KILLED.
HEATS INDICATED WITH (*) FINE GRAINED.
HEATS INDICATED WITH (+) MADE IN CANADA WITH DOMESTIC AND NORTH AMERICAN MATERIALS.

Dimensions (T x W x L)	Batch No.	Heat No-MS	Quantity	Pcs
0.0440 " x 48.000 "	SAM9918B	3683T3-51	21,740 LB	1

CHEMICAL PROPERTIES

Heat No. (wt%)	C	Mn	P	S	Si	Cr	Ni	Cu	Mo	Al	Nb	V	B	Ti	N
3683T3*+	0.04	0.26	0.003	0.007	0.020	0.01	0.01	0.01	0.00	0.035	0.000	0.000	0.0000	0.001	0.0033

K. UGHADPAGA

MANAGER METALLURGICAL SERVICES

WARNING THE TEST RESULTS AND VALUES REPORTED HEREIN INDICATE ONLY THAT (1) THE PARTICULAR STEEL FOR WHICH THIS CERTIFICATE IS ISSUED MEETS THE MINIMUM SPECIFIED YIELD STRENGTH AND (2) THE ANALYSIS AND PHYSICAL PROPERTIES OF SUCH STEEL ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE SPECIFICATION INDICATED. THE RESULTS OR VALUES REPORTED HEREIN CAN NOT BE USED TO QUALIFY THE STEEL FOR ANY SPECIFICATION OTHER THAN THE ONE INDICATED AND CAN NOT BE RELIED UPON FOR ANY PURPOSE (INCLUDING DESIGN OR CALCULATIONS) AS REPRESENTING THE ACTUAL STRENGTH OF SUCH STEEL.